

RESPONSIVENESS SUMMARY

**ARC 5898B
Chemical Criteria
Chapter 61: Water Quality Standards**

**Prepared by the
Iowa Department of Natural Resources
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RESPONSIVENESS SUMMARY

Introduction:

This is a summary of the comments received in response to proposed revisions to water quality standards (WQS) listed in Chapter 61. The proposed modifications were published in Notice of Intended Action **ARC 5898B** on May 23, 2007. This document provides a discussion of the issues raised by the comments as well as recommendations for final EPC action on the proposed changes.

Summary of the Notice of Intended Action:

The modifications to Chapter 61 will revise the current numerical criteria for 20 chemical parameters to protect aquatic life for the following designations: Class B(WW-1), Class B(WW-2), and Class B(WW-3).

The 20 parameters include: arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, cyanide, chlordane, 4,4'-DDT, endosulfan, heptachlor, heptachlor epoxide, polychlorinated biphenyls (PCBs), toxaphene, aluminum, and total residual chlorine.

The modifications will also revise current numerical criteria to protect human health for 42 chemical parameters for Class HH – Human Health.

The 42 parameters to protect human health for the Class HH designation include: antimony, arsenic (III), benzene, benzo(a)pyrene, bromoform, carbon tetrachloride, chlordane, chlorobenzene, chlorodibromomethane, cyanide, 4,4'-DDT, para-dichlorobenzene, 3,3-dichlorobenzidine, dichlorobromomethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-trans-dichloroethylene, 1,2-dichloropropane, bis(2-ethylhexyl)phthalate, dieldrin, 2,3,7,8-TCDD(dioxin), endosulfan, endrin, ethylbenzene, heptachlor, heptachlor epoxide, hexachlorobenzene, gamma-BHC(lindane), hexachlorocyclopentadiene, nickel, polynuclear aromatic hydrocarbons (PAHs), pentachlorophenol (PCP), polychlorinated biphenyls (PCBs), phenols, selenium, tetrachlorethylene, thallium, toluene, toxaphene, trichloroethylene (TCE), vinyl chloride, and zinc.

The chemical parameter aldrin is proposed to be added to protect aquatic life and human health.

These proposed modifications will revise the current chemical criteria for the parameters listed above to reflect the latest scientific information available and Environmental Protection Agency (EPA) national guidance.

Public Comments:

The Notice of Intended Action was formally published in the Iowa Administrative Bulletin (IAB) on May 23, 2007 as ARC 5898B. While the Administrative

Procedures Act requires only the “opportunity for oral presentation” which can be granted if a petition is signed by 25 persons, the department scheduled six (6) public hearings without any petitions being submitted. These six public hearings were held across the state: Atlantic and Cherokee on June 14, 2007; Clear Lake and Manchester on June 19, 2007; Washington on June 21, 2007; and Des Moines on June 26, 2007.

In addition to the EPC meetings, press releases, and standard IAB publications, the department sent letters to potentially affected NPDES permit holders notifying them of the public hearings and encouraging attendance to learn more about how these facilities may be impacted by the proposed rule.

Approximately 9 persons or groups provided written comments on the proposed WQS revisions (The commentators’ names are listed in Appendix A). The responsiveness summary attempts to address all of the comments received. The department did not list every comment received, but rather merged common comments into major issue areas. The questions and comments were sorted into common topics and the department’s response is written under each topic section. The department did attempt to address every question or comment received.

Comment Categories and Response

Comments in Support of the Notice of Intended Action:

“The Iowa Chapter of the Sierra Club supports the proposed rules to adopt EPA’s 304a values for the 20 chemical parameters associated with aquatic life protection - use designations B(WW1), B(WW2), and B(WW3); and for the 42 chemical parameters associated with human health protection – HH use designation.

EPA’s 304a values are the result of a continual and extensive review by EPA scientists of credible peer-reviewed scientific literature, and are offered as the minimums deemed appropriate for states to adopt to protect for aquatic life and human health. We believe the department is correct in adopting these values as statewide minimums, while recognizing that there may be site-specific instances where more protective values may need to be used.

We also believe that the department is correct in moving forward with this proposal in a timely manner so that Iowa’s water quality standards (WQS) and the implementation of those standards through the NPDES permit program, can continue to progress towards meeting both the intent and the letter of the Clean Water Act.

The department may receive criticism from others for proceeding with this rule-making without a protracted Technical Advisory Committee process. The Sierra Club would like to stress two points in this regard. First, all members of the TAC have had the opportunity both verbally and in writing to contribute to the chemical criteria discussion. Their views, whether based upon science or self-interest, have been expressed and noted by the department. Second, given the make-up of the current TAC, it is not likely, necessary, or even appropriate that the TAC reach a consensus opinion, if “consensus” means adopting rules that do not protect for aquatic life and human health. Compromising just for the sake of compromise is wrong-headed. In fact, the department benefits most by hearing the different views (which they have) and then adopting a position based upon EPA’s guidance and the department’s obligation to implement and enforce the Clean Water Act most effectively in Iowa. We applaud the Director for doing so.”

“The Iowa Environmental Council supports the DNR proposed rules that will adopt the minimum EPA 304a criteria values for these chemicals. We further support the DNR’s decision to move forward with the adoption of these criteria changes in a timely manner which will allow EPA approval of Iowa’s new water quality standards adopted last year. The new use designations approved last year and the proposed new chemical criteria represent a substantial increase in protection for Iowa’s warm water streams and will help bring Iowa’s water quality standards into compliance with the minimum requirements of the federal Clean Water Act.”

Issue 1: Technical Advisory Committee Make-Up

“ . . . make-up of the current TAC is wrongly skewed towards the interests of the wastewater industry. Certainly their views should be heard, but should not predominate. The current TAC has four NGO representatives of the wastewater industry, but only one NGO representative of environmental groups. The department and the people of Iowa would be better served by a more balanced TAC.”

Response: The department feels the TAC that was created for this chemical criteria review was not wrongly skewed. The purpose of the TAC was to provide technical and scientific input to help shape the numeric chemical criteria that ensure the waters of the state and the users of these waters are appropriately protected.

Each individual on the TAC was considered technically proficient in different areas of water quality and was able to provide valuable insight into the review process. This particular TAC was designed to be smaller than the previous committees which allowed for a more streamlined, meaningful review process.

Issue 2: Technical Advisory Committee Process

“I object to the agency's circumvention of the TAC process (set up by the state legislature as the appropriate process for developing the technical portion of water quality criteria regulations) based on an excuse of needing to move forward. Almost four months have elapsed between the TAC meeting in the middle of January and the April 3, 2007 commission meeting taking up the subject. It seems to me that there was plenty of time to have one or two additional TAC meetings prior to moving to NOIA at today's commission meeting. Why was this not done? If this issue was so urgent, why was it not pushed forward to get on the February or March EPC agendas?”

“It appears that this revision was never really reviewed and commented on by the technical advisory committee as is required by the direction of the state legislature. I recommend this be sent back to the TAC for review and any changes it may need.”

Response: The department's approach regarding this criteria rule making effort changed in March 2007. In short, the department decided to move forward with 304(a) values for all of the 20 criteria instead of trying to justify changes to the criteria based on research conducted by DNR. EPA has consistently stated that if we adopt 304(a) criteria for these 20 parameters the rule package submitted in March 2006 will be approved with little or no additional review by EPA.

The department believes it is more important in this case to expedite the approval of the March 2006 WQS submittal so we can move forward with the implementing those WQS revisions. The department does not agree **or** disagree with the science in establishing criteria, but feels it is prudent to not delay the approval of the WQS submittal further by engaging in a scientific debate with EPA and/or others.

Issue 3: Notification of Rule Change Process

“Process for announcing Public Hearings on these significant changes were not well communicated and formal written notice was not received by our facility until June 18th, which did not leave time to attend any of the remaining public hearings due to prior commitments.”

“I object to IDNR not making a proactive effort to engage the public in this rulemaking process. While the IDNR may be following the “letter of the law”, by posting the public hearings on an obscure place on its website, it has not been proactive and reached out to the public through the media and econews listserve as it has in the past. I believe rulemaking should be extended another month with appropriate media and public notice provided to allow adequate input from the public.”

“Inadequate stakeholder notification by the IDNR has resulted in a lack of awareness, understanding, and the ability by the regulated community to adequately address the impacts of the proposed WQC changes and to provide more meaningful and comprehensive comments.”

Response: The department strives to be proactive and keep stakeholders informed and notified of possible and proposed WQS changes well beyond what is required in the Administrative Procedures Act (APA).

Chapter 17A.4 of the APA requires that proposed rule change be published in the Iowa Administrative Bulletin (IAB) as a Notice of Intended Action (NOIA). The NOIA shall be published for at least 35 days in advance of the action. The NOIA shall include a statement of the substance of the intended action and the manner in which interested persons may present their views.

The department initially presented the Environmental Protection Commission (EPC) with the draft NOIA for informational purposes at their April 3, 2007 meeting. The notice of this meeting and issues involved was highlighted in the March 22, 2007 version of the EcoNewsWire, published in the March 30, 2007 version of the Water Quality Listserv, and published online.

The department presented the EPC the NOIA for a decision to initiate rule making at their May 1, 2007 meeting. The notice of this meeting and issues involved were highlighted in the April 26, 2007 version of the EcoNewsWire,

published in the April 12, 2007 versions of the Water Quality Listserv, and published online. The EPC voted unanimously to initiate the rule making process. The NOIA was published on the WQS webpage throughout this process.

The NOIA was formally published in the IAB on May 23, 2007 as ARC 5898B. While the Administrative Procedures Act requires only the “opportunity for oral presentation” which can be granted if a petition is signed by 25 persons, the department scheduled six (6) public hearings without any petitions being submitted. These six public hearings were held across the state: Atlantic and Cherokee on June 14, 2007; Clear Lake and Manchester on June 19, 2007; Washington on June 21, 2007; and Des Moines on June 26, 2007. These hearings were at varying times of the day to attempt to accommodate as many special needs as possible.

All interested persons are afforded not less than 20 days to comment from the publication date of the NOIA. In this case, the 20 days would have resulted in the comment period closing on June 12, 2007. The department extended this deadline an additional 28 days in the NOIA to July 10, 2007. In addition, stakeholder demand resulted in the department extending the comment period one more week to July 17, 2007 to accommodate the needs of stakeholders.

In addition to the EPC meetings, press releases, and standard IAB publications, the department sent letters to potentially affected NPDES permit holders notifying them of the public hearings and encouraging attendance to learn more about how these facilities may be impacted by the proposed rule.

Issue 4: Total Standards vs. Dissolved Standards

“Total metal standard versus dissolved or bio-available metal criteria must be closely evaluated to determine if the margin of safety from a total standard in this rulemaking is reasonable and appropriate.”

“Use of total metal vs dissolved metal criteria needs to be discussed and resolved. IDNR uses total metals which is conservative since a fraction of the metal (primarily the particulate and complexed forms) is not bioavailable and does not impact aquatic life. The present rulemaking continues using total metals which may or not be appropriate.”

“The DNR is using Total metal versus Dissolved metal in their standards and this appears to be an error because Total metal does not accurately reflect what the impact on a stream would be as undissolved metal does not impact aquatic life.”

Response: The present EPA 304(a) criteria for metals were developed using total recoverable metal measurements. In the past, states have used either dissolved or total recoverable metal when adopting metals criteria. Even though

EPA recommends that State water quality standards be based on dissolved metal, EPA has been approving both forms of metal criteria because of the scientific uncertainties regarding the bioavailability of particulate metal in ambient waters. IDNR has been developing metal criteria based on total recoverable concentrations over the years because of the following reasons:

- In order to express the EPA criteria as dissolved, a total recoverable to dissolved conversion factor must be used since the EPA criteria were developed using total recoverable metals. EPA has published some of the conversion factors for different metals. These conversion factors were usually derived based on published tested data at low Total Organic Carbon (TOC) and total suspended solids (TSS) that may not represent site-specific conditions.
- EPA's National Pollutant Discharge Elimination System (NPDES) regulations require that limits of metals in permits be stated as total recoverable in most cases (see 40 CFR 122.45(d)). Exceptions occur when an effluent guideline specifies the limitation in another form of the metal, or the approved analytical methods measure only dissolved metals. The permit writer may express a metals limit in another form when required such as highly unusual cases to carry out provisions of the CWA. Also, Total Maximum Daily Loads (TMDLs) for metals must be able to calculate total recoverable metal in order to achieve the mass balance necessary for permitting purposes.

So far the department has been applying total recoverable metals in NPDES permits. Expressing ambient water quality criteria for metals as the dissolved form poses a need to be able to translate from dissolved metal to total recoverable metal for TMDLs and NPDES permits using a translator, which is a function of the partition coefficient for metals. The determination of the site specific partition coefficients can be data intensive. The use of total recoverable metal criteria does not need translation between dissolved to total recoverable metals.

- The use of total recoverable metals instead of dissolved may result in more conservative limits in certain cases since the particulate fraction of metals may not be bioavailable and the toxicity of particulate metals may be significantly less than that of dissolved metal. However, metals toxicity is significantly affected by site-specific factors. For example, an electroplating facility could add lime and use clarifiers to treat wastewater. Thus, it may discharge a combination of solids not removed by the clarifiers and residual dissolved metals. When the effluent from the clarifiers, usually with a high pH level, mixes with receiving water having significantly lower pH level, these solids instantly dissolve. Measuring dissolved metals in the effluent, in this case, would underestimate the impact on the receiving water.

Despite the challenges, if the department decides to express aquatic metal criteria in dissolved basis, it would be logical to do it for all designated uses including Cold Water designations and Lakes and Wetlands. At this time, the

department is only addressing criteria changes for the three warmwater designations, Class B(WW-1), B(WW-2) and B(WW-3).

Issue 5: Species Deletion and Recalculation

“The species deletion/recalculation process should be revisited and refined. I object to using a more stringent, non-warmwater species such as rainbow trout for Topeka Shiner. Topeka Shiner is a warm water species and does not inhabit the same waters as the coldwater rainbow trout. Appropriate species should be selected to be protective of sensitive or endangered species.”

“These revisions impose more stringent criteria than the federal standards require because federal guidance clearly allow and promote the use of appropriately adjusting the criteria based on the actual species present or likely to be present in the designated streams. For more than 30 years, Iowa (as well as most other states) has used this approach to establish protections for each classification based on the species present in Iowa waters. This proposal clearly rejects this scientific basis and federal guidance, thus imposing more stringent criteria to protect Iowa streams for species that have not been identified as present in Iowa.”

“There will be little, if any, benefit derived from these more restrictive limits because the species creating the criteria are not present in most Iowa streams. It appears that IDNR does not want to follow science and avoid un-necessary, overprotective criteria. Thus Iowa facilities will again be required to spend limited resources because of poor leadership at the state.

There are references about replacing some warm-water species with cold-water species in the testing criteria. Since Iowa is a predominantly warm-water state I cannot see the relevance of doing this.”

“IDNR Acceptance of a ‘Default’ EPA WQC for Arsenic Based on Human Health-Fish Consumption is Inappropriate and IDNR Should Establish a WQS Which Considers Iowa Environmental Factors”

Response: EPA regulations allow States to develop site-specific criteria based on aquatic life species that occur at the specific waterbodies. The department initially followed the EPA guidance procedure to perform the recalculation procedure to take into account relevant differences between the sensitivities of the aquatic organisms in the national dataset and the sensitivities of organisms that occur in Iowa streams.

In addition, under the Endangered Species Act, the aquatic life criteria should also be protective of any endangered species present in the waterbodies. Several aquatic life species listed as the federally endangered species reside in Iowa waters, such as Topeka Shiner. The USFW Endangered Species Act (ESA, 1973) Section 7 directs all Federal agencies to use their existing

authorities to conserve threatened and endangered species and, in consultation with the Service, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Section 7 of the Endangered Species Act requires all Federal agencies, in consultation with the Fish and Wildlife Service and the National Marine Fisheries Service (the Services) to assure that any action authorized, funded, or implemented by a Federal agency does not jeopardize the existence of endangered or threatened species or result in the destruction or adverse modification of their critical habitat.

To ensure the recalculated criteria are protective of these endangered species a justification is made for each chemical. If 304(a) criteria are proposed, the consultation is deferred to the national level based on the Memorandum of Agreement between U.S. Fish and Wildlife Service and the U.S. EPA. Because of the lack of toxicity data for endangered species in the national toxicity dataset, department staff conducted a new toxicity data search for the endangered species and the relevant chemicals. To protect Topeka Shiner, Rainbow Trout is used as the surrogate species for most of the chemicals addressed. Based on the current available toxicity test data on some of the endangered species, after 96-hour of exposure, warm water listed species were more sensitive than the fathead minnow 33% of the time. However, the listed warm water species were always less sensitive than the Rainbow Trout. The use of Rainbow Trout as the surrogate species for Topeka Shiner has been determined to be adequately protective. When the toxicity data for species in the same family as the endangered species are available, the species in the same family are used as the surrogate species instead of the Rainbow Trout.

Thus, because of the lack of toxicity data for endangered species in the toxicity database for deriving the aquatic life criteria, surrogate species may be used to ensure the protection of endangered species. For certain chemicals, the warmwater species may show the same sensitivity as the cold water species. Until toxicity test data become available for the endangered species, the surrogate species approach is a defensible method in developing site-specific criteria.

Since the department has decided to propose the adoption of EPA 304(a) national criteria, the consultation with US Fish and Wildlife is deferred to the national level in this case.

Issue 6: Ceriodaphnia spp.

"I concur with the original approach proposed by IDNR for criteria recalculation procedure, that included all Daphnia spp. for all three warm water designations, Class B(WW-1), B(WW-2) and B(WW-3), and kept Ceriodaphnia spp. for Class B(WW-1) use designation since the literature search indicates that relatively abundant Daphnia spp. were found in different stream orders, but ceriodaphnia spp. were not found. The unilateral suspension of TAC/EPA dialogue prevented agreement from being reached on this important matter. The proposed

rulemaking keeps Ceriodaphnia spp for all stream categories even though smaller streams do not have Ceriodaphnia spp.”

Response: IDNR staff conducted a literature review on the occurrence of *ceriodaphnia* species during the criteria recalculation for the three warmwater designated stream uses. Based on the literature review, the department kept all the *Daphnia* species for all three warmwater designations and only kept *ceriodaphnia* species for Class B(WW-1) warmwater Type 1 designation. The literature data demonstrated that *Ceriodaphnia* prefer a pond environment. They may occupy backwater, static areas along larger rivers, but not the flowing portions of streams unless they have been washed out of reservoirs or backwaters. EPA expressed concerns regarding the deletion of *ceriodaphnia* in Class B(WW-2) and Class B(WW-3) designated streams since there is lack of site-specific monitoring data to show the absence or presence of *ceriodaphnia* in Iowa waterbodies.

The Department made the decision to propose the 304(a) criteria. The presence or absence of *ceriodaphnia* in Iowa streams becomes a moot point at this time. However, this would not prevent the development of site-specific criteria for certain waterbodies in the future if site-specific data could show that *ceriodaphnia* are not resident species in specific streams.

Issue 7: Flow Regimes

“The science and methodology used for derivation of chemical water quality criteria is complex and not exact. The process has multiple safety factors to account for uncertainty in the science and methodologies. Iowa uses the most stringent flow regimes for application of these standards even though less stringent flow regimes can be applied according to USEPA. Iowa should go to the allowable less stringent flow regimes due to the huge factor of safety already built into the water quality criteria derivations.”

“The flow regimes which have been chosen by the DNR appear to be even more conservative than the EPA's, I don't understand why this is necessary as there are large safety margins built into the EPA standards.”

Response: The use of numerical water quality criteria for developing water quality-based permit limits and for designing wastewater treatment facilities requires the selection of an appropriate allocation model. Dynamic models are preferred for the application of aquatic life criteria in order to make the best use of the specified concentrations, durations and frequencies. If dynamic models cannot be used, then an alternative is steady-state modeling. An important step in the application of steady-state modeling to streams is calculating the design flow. To do steady-state wasteload allocation analyses, these low-flow values become design flows for sizing treatment plants, developing wasteload allocations, and developing water quality-based effluent limits. EPA believes it is essential that States adopt design flows for steady-state analysis so that criteria

are implemented appropriately. EPA recommends two methods for determining design flows, the hydrological based method and the biologically based method. The hydrological based design flow method is presently used by many states.

EPA recommends the use of 1Q10 stream flow for acute criteria and 7Q10 for chronic criteria to derive the water quality based limits (or wasteload allocations). EPA is also recommending the harmonic mean flow to be applied with human health criteria for carcinogens and 30Q5 for non-carcinogens. The department followed the EPA guidance and adopted these recommended stream critical low flows in the wasteload allocation procedure. The use of the critical low flow 7Q10 and 1Q10 flows in the steady-state models for wasteload allocations will ensure that the water quality standard would not be exceeded more than once every 3 years on average in ambient waters as required for the frequency of excursions in the aquatic life criteria. The application of harmonic mean flow with human health criteria should be protective of human health effects from life time exposure. Thus, the water quality-based limits derived using steady-state modeling and the corresponding critical low flows will ensure the designated uses are protected.

EPA guidance provides the flexibility for States to adopt critical low flows that are different than the EPA recommended flows. However, such flows must be scientifically justified and defensible.

IDNR adopted the EPA recommended critical low flows in the WQS rules a few years ago. To adopt any critical low flows that are different than EPA recommended values, IDNR will need to conduct additional research and go through rule making, and get EPA approval. This could be future effort.

Issue 8: Differentiation between B(WW-1,2,3)

"This proposal appears to indicate an effort at the IDNR to eliminate any differentiation between Iowa streams by making the criteria simply a "one size fits all " approach. There is no scientific basis, statutory or regulatory history, or common sense evaluation that supports the concept that all Iowa streams are equally supportive of all recreational or aquatic potential."

Response: The department did attempt to differentiate the criteria for each use primarily using EPA's species deletion methodology. Discussions in the TAC meeting were focused on the presence and absence of ceriodaphnia in free flowing streams. Ceriodaphnia is one of the most sensitive species that EPA considers in their 304(a) criteria for fresh water systems. While EPA and department staff reached different conclusions based on the scientific literature research, EPA concluded in a memorandum dated March 21, 2007 that "the state has not submitted to EPA any monitoring data for its flowing waters to show that cladocerans are not present and therefore has provided no conclusive evidence that the species do not "occur at the site"".

While it is true the proposed criteria changes result in nearly equivalent protection for the three different Class B warm water aquatic life-type streams it is important to note that it is scientifically based per EPA guidance. Since the early 1980's, EPA has developed water quality criteria for specific pollutants to protect aquatic life under Section 304(a) of the Clean Water Act. The criteria provide guidance to states and tribes for adopting water quality standards which are the basis for controlling discharges or releases of pollutants. The majority of EPA's aquatic life criteria have been derived from two methodologies: the 1980 *Guidelines for Deriving Water Quality Criteria for the Protection of Aquatic Life and Its Uses*, and the 1985 *Guidelines for Deriving Numerical National Aquatic Life Criteria for Protection of Aquatic Organisms and Their Uses*.

The proposed changes may appear to provide a rationale for merging the three different Class B warm water aquatic life-type streams into one overall warm water stream use. However, while this may seem appropriate from an National Pollutant Discharge Elimination System (NPDES) permit program perspective it is important to understand that other water quality programs utilize these designated uses as well. The department's water quality monitoring and assessment section have incredibly detailed assessment methodologies for Iowa's wadable streams. The data gathered from these assessments allows the department to determine whether or not Iowa's rivers and streams are meeting or not meeting their warm water aquatic life designated uses. For these purposes, the differentiation of the designated uses is important as the scoring structures for these assessments can be calibrated based on these designated uses.

Issue 9: Impact on Biosolids and Manure Land Application

"There is no mention of the impact that this standard might have on biosolids and manure land application, I would think this could be significant, but it isn't addressed anywhere that I can find. I would like to see this issue addressed."

"No mention of possible impacts on biosolids and manure land application programs are made in the rulemaking and economic impact analyses. Analyses should evaluate impact of the rules on biosolids/manure land application programs."

Response: Land application of biosolids from municipal and industrial sources is regulated under Iowa Administrative Code 567 Chapter 67: Standards for the Land Application of Sewage Sludge. The majority of these standards are derived from federal regulations at 40 CFR Part 503.

Land application of manure is primarily regulated for nitrogen and phosphorus under IAC 567 Chapter 65 Open Feedlots.

The changes in chemical criteria for the waters under these designated uses in the proposed rules have no bearing on biosolids and manure land application regulations or implementation thus no impacts were noted.

Issue 10: Economic Impact

“Fiscal analysis failed to consider significance internal costs for local limit engineering studies, staff time, and other resources that may be required to meet these new standards. It is clear from my discussions with others inside municipal treatment facilities and our contributing industries, that industrial contributors to affected pretreatment and non-pretreatment cities and those industries outside those cities do not understand the potential long term impacts from this new rulemaking.”

“Fiscal analysis failed to consider the cost to control other sources of metal contribution, such as; City of Cedar Rapids Water Department adds zinc orthophosphate to the water supply to help meet Safe Water Drinking Act requirements to control leaching of lead and copper in piping and plumbing fixtures.”

“The revision of this criteria will have an economic impact on Iowa industries and communities. The economic impact analysis conducted by the department is inadequate and does not provide a clear picture of the range of economic cost that will be caused by this rulemaking. A more in-depth, comprehensive economic impact assessment should be conducted by the department and articulated to the public.”

“The cost analysis is clearly flawed. Nearly all, if not all, Iowa communities with pretreatment programs will need to recalculate their headworks limitations and impose more restrictive limits to their pretreatment dischargers. This alone will cost more than the \$105,560 IDNR has identified. I agree that it is not possible to estimate the actual pretreatment costs industrial dischargers (direct and/or indirect) will experience, but it will be significant.”

“I would like to see a more detailed and in-depth study of the exact impact the new standard would have on Iowa industry. The current study varies so widely on the projected costs that it is not possible to determine what the real cost might be. Giving a range for \$0. to \$41 million leaves a bit to be desired.”

“From discussions with Department staff, I understand that the fiscal impact analysis prepared for this rule focused solely on facilities with existing permit limits for affected chemical constituents. However, as mentioned above, the Department has proposed levels for certain chemical constituents significantly lower than drinking water standards. In those cases, it is likely that any permitted facility receiving drinking water, as well as untreated groundwater, would have a significant contribution of that constituent (unless an allowance is granted for incoming pollutant load) and therefore would potentially be required to have a corresponding discharge limit. As it is likely that every publicly owned treatment works (POTW) within the State receives drinking water in its raw waste, the Department would be required to conduct a fiscal evaluation per Iowa Code for

each POTW. This review should include an evaluation for each proposed chemical specific modification.

The Fiscal Impact Statement should include a discussion of potential costs for each affected POTW. While the report indicates several treatment systems would likely be impacted by the rule, a discussion of potential costs is presented only for one chemical constituent at a single PTOW. This report should be revisited to include a more detailed fiscal impact analysis. Costs should be evaluated and presented for each potentially affected PTOW. In some cases, treatment to proposed levels would be extremely expensive, assuming technology exists to achieve those levels.”

“This rule could impose significant cost not only to publicly owned treatment systems, but to industrial sources as well. While not required by law, the Department should evaluate the fiscal impact to all affected sources. A complete fiscal evaluation would allow all stakeholders, including public policy makers, the opportunity to fully evaluate the cost-benefits of this rule. It is likely, considering levels proposed, a detailed evaluation will show that the statewide fiscal impact of the proposed amendments would be immense.”

“ . . . We question whether the benefits and costs of this proposed action have been, or given the present state of information, even can be, estimated. The projected costs to Charles City presented in the DNR fiscal impact statement refers to only one of the sixty-three chemical parameters addressed in the proposed action and only one of the possible contributors, Fort Dodge Animal Health. Even with so narrow a focus the cost projection shows that the impact of the proposed action could be crippling to our community. We believe that a complete fiscal impact analysis should be made which considers all NPDES discharges, all of the State’s water bodies and all chemical parameters before finalization of any water quality criteria is made.

. . . Although the DNR may have limited the scope of its fiscal analysis to the cost of effluent treatment, the City wishes to point out that the true cost of these proposed changes may be measured in the lives of the people working at these companies and in the economic well-being of the community. We oppose any premature judgment to approve these water quality criteria changes that would threaten the livelihood of the citizens of Charles City and the surrounding communities.

. . . The City asks that before a final decision is made by the DNR and the Environmental Protection Commission, as we understand currently based upon default criteria levels and impersonal guidance from the EPA, the DNR prepare a thorough and complete analysis of the impacts of the proposed criteria on the citizens and communities affected.”

Response: The department's evaluation of fiscal impacts looked at the projected costs and potential benefits associated with the proposed rules changes. The department understood that the primary fiscal impact occurs with the implementation of revised NPDES permit limits for permitted point source dischargers. It is important to note that department staff did not evaluate the specific individual impacts or treatment needs for each wastewater treatment facility noted in the Fiscal Impact Statement (FIS). Basic assumptions and evaluations were made on the general impacts on all facilities predicted to be affected. The specific individual impacts and needs will be best evaluated by the facility's staff or retained consultant. Innovative or unique treatment methods may be available to some facilities thereby reducing specific costs.

The anticipated benefits from revising the chemical criteria are associated with the potential improvements to: instream conditions for aquatic and semiaquatic life, wildlife and livestock watering needs, and aesthetic conditions. Common anticipated benefits will apply to the streams designated as Class B(WW-1, 2 or 3) or Class HH currently receiving wastewater discharges, but also waters receiving any future discharge of wastewater containing these pollutants. The benefits in the nature of projected improvements to instream water quality below wastewater treatment discharges would be derived from the construction of the treatment improvements or process modifications to comply with the numerical criteria in the Water Quality Standards. None of these potential benefits has a readily identifiable monetary value and were not estimated in FIS.

In many cases, it is not possible to specifically quantify the impact or benefits to the persons or groups affected by the rule. However, it is likely possible to describe in general, who is affected and how. For example, it may be known that increased regulations will have the affect of increasing the cost to the regulated businesses, but will benefit the public through increased air or water quality.

The fiscal impact assessment attempted to establish a range of costs that considers both higher cost and lower cost scenarios. The assessment incorporates conservative approaches to estimating the potential fiscal impact. It is understood that a multitude of factors or variables may result in estimates that are either below the lower cost estimates or exceed the higher cost estimates and were not considered due to the difficulty of predicting which variables could apply to any facility, such as the appropriate stream use designation, flow available at critical low flows, existing treatment capabilities, etc.

The proposed chemical criteria revisions may affect regulated NPDES point source dischargers. The majority of the proposed changes in the NOIA are organic chemical compounds, such as toxaphene and endosulfan, and are not expected to have a fiscal impact for point sources as there are no known point sources in Iowa that commonly or knowingly discharge these pollutants in their effluent. The potential impact will likely be attributed to the changes of the criteria for the metals (11 overall) listed such as copper, lead, and zinc.

Relatively speaking, a smaller percentage of all NPDES regulated entities monitor and have limits for metals. These facilities are typically industries that work regularly with metal such as metal finishers and electroplaters. There are approximately 139 total private companies in the State of Iowa that are in the general business of metal finishing. None of these companies discharge directly to a water of the state. Rather their process wastewater effluent is discharged to the municipal sanitary sewer which is then “processed” at the municipal wastewater treatment plant. These companies are required to have a signed treatment agreement with the municipality for acceptance of their waste stream. These agreements typically detail the pollutants of concern and establish limits that the company is not to exceed.

The companies may or may not treat their process wastewater depending on the details of their process and limits established in the treatment agreement with the municipality. Typically small amounts of water are used in the metal finishing process and will constitute a small percentage of the total raw wastewater traveling to the municipal wastewater treatment plant. DNR staff determines whether or not there is a reasonable potential for the pollutants discharged from the company to cause a water quality concern for all the pollutants that are eventually discharged to a water of the state. Though not common, the department will identify potential water quality concerns for a specific pollutant and establish monitoring and limits for that pollutant into the municipality’s NPDES permit.

While metal finishing is the most common contributor of metals to municipalities there are many other industrial contributors, but in smaller numbers. These industries can include, but are not limited to landfills, power plants, and pharmaceutical manufacturing.

The proposed revisions to the chemical criteria will result in more stringent permit limits for nearly all metals. The question is whether or not these changes will force an industry to install treatment, upgrade its facilities, change its process, or do nothing.

It is generally accepted by the department that if the industry already has an active treatment system for metals removal that compliance with more stringent limits will still be achievable. In several instances, many dischargers of metals do not possess any level of treatment as the volume of process wastewater in relation to the overall municipal raw waste influent stream, the assimilative capacity of the receiving stream, and the conservative reasonable potential determination can demonstrate there are no water quality concerns.

If the current metals limits become more stringent in NPDES permits as a result of the criteria revisions, then it is logical to conclude that the reasonable potential that a water quality concern will occur increases. This will result in more facilities

having to monitor and meet limits for an array of metals. Furthermore, it can be concluded that reasonable potential calculations based on the previous criteria that demonstrated no water quality concerns may change and could possibly demonstrate water quality concerns based on the revised criteria. This will likely increase the monitoring for metals in these permits.

The department has compiled a list of metal working industries that provide treatment compared to others that do not. There are approximately 74 industries in Iowa have an active treatment process for metals removal while 65 do not provide treatment. The department uses the conservative reasonable potential approach to assess water quality concerns. Whether or not the process wastewater is treated is typically a moot point when determining reasonable potential as the worst case scenario effluent quality is considered regardless of the treatment. However, this is an important factor when determining potential fiscal impacts. The department presumes that facilities that do not provide active treatment are more likely to be fiscally impacted by these rule revisions.

The department conducted preliminary research to provide a more detailed fiscal analysis. The research explored potential implementation scenarios in greater detail to determine exactly how they may be impacted by these revisions. The research revealed that the interaction of multiple variables in the industrial wastewater treatment process including specific industrial processes, the types of treatment and pollution prevention measures employed, reported effluent values, new calculated limits via revised wasteload allocations, and implications of stream use designation changes all have an influence on whether the proposed changes will incur a cost to a regulated entity.

Unlike municipal wastewater treatment facilities, industries vary significantly in their manufacturing processes and the makeup of their wastewater streams. Treatment costs for a specific set of contaminants (e.g. heavy metals) or a single contaminant (e.g. arsenic or cyanide) can be developed using a number of available reference materials. General application of these estimates to multiple, or in this instance, hundreds of different facilities is problematic if not impossible. There are a number of factors that must be considered to provide a reasonable degree of accuracy to the estimates:

1. What are the constituents of concern for each facility?
2. Does the facility discharge directly to a receiving stream or to a municipal wastewater treatment facility?
3. Which constituents of concern present in the effluent have a reasonable potential to violate the new criteria?
4. What is the effect of the 2006 WQS changes on the previous wasteload allocation (i.e., what are the revised NPDES permit limits considering the revised chemical criteria, changes to the stream designation and elimination of protected flow provisions?)

5. What are the existing effluent levels for each constituent of concern that is discharged under the current NPDES permit?
6. Are the industrial wastewater streams for an individual facility segregated prior to discharge and if so, what are the flow rates for each wastewater stream?
7. Does the facility treat (or pre-treat) its wastewater and if so, what type of treatment technology is utilized?
8. Where a reasonable potential to violate the new criteria exists, is additional treatment necessary or are there alternatives available such as source reduction or recovery to reduce the existing levels in the wastewater stream?
9. What are the influent concentrations for each constituent of concern prior to any existing or anticipated treatment process?

Unfortunately, several of these factors cannot be overcome due to the lack of information that is readily available. In particular Factor # 3, reasonable potential to violate the criteria, requires case-by-case analysis for each facility. Without this determination, the overall estimate of cost for all facilities will require an assumption of whether or not additional treatment is required. Based on research for several selected facilities, there is no clear indication that additional treatment will or will not be required for the majority of facilities. In addition, criteria for constituents not currently included in the NPDES permit may be revised such that monitoring, and potential treatment may be required under the new criteria.

Further compounding this issue is Factor # 6, segregation of wastewater streams, and the fact that available cost estimation techniques are dependent upon, and in some cases highly sensitive to, the flow rate of the wastewater stream.

The **example** used in the FIS highlighted the City of Charles City. The City of Charles City accepts industrial wastewater from Fort Dodge Animal Health. Effluent limits for cyanide are included in the City's NPDES permit as a result of this industrial contributor. If it is assumed that additional treatment is required for cyanide destruction (oxidation through alkaline chlorination) then cost estimates can be derived based on the flow included in the City's treatment agreement with the industry.

However, this flow may include additional wastewater streams that do not include cyanide. If it is assumed that the entire wastewater stream (394,000 gallons per day for Fort Dodge Animal Health) must be treated to remove cyanide, capital and annual operating and maintenance costs of \$1.2 million and \$41 million are estimated, respectively (derived from EPA 821-R-95-002). These costs are estimated **assuming** an influent cyanide concentration of 1.5 mg/L and the annual operating cost estimate is extremely sensitive to the flow rate due to chemical costs for sodium hypochlorite and sodium hydroxide. Actual influent concentrations are **not** reported to the department and presumably, any process

waste stream containing cyanide may be segregated from the total wastewater flow records available to the department.

Thus, the general cost estimate using readily available information is likely to be greatly exaggerated. Furthermore, if the monthly operating data from Charles City is analyzed in detail, and if revised effluent limits for the City based on the proposed criteria for cyanide are calculated, **it does not appear that the existing levels of cyanide present in the municipal plant effluent would violate the proposed criteria.** Therefore, the cost estimated to meet the new criteria ranges from \$0 to over \$41 million per year **depending on whether or not the facility is evaluated on an individual basis or generally assumed to require treatment.**

Based on the evaluation of several potentially affected facilities which do employ treatment, it is anticipated that costs may be significant for certain individual facilities. Industries that discharge metals to small receiving streams possess the highest potential for adverse fiscal impacts. However, any attempt at broadly estimating a statewide cost for all potentially affected facilities with data that is readily available will present a range in costs so wide as to be effectively meaningless. The overall costs statewide cannot be estimated with any degree of accuracy due to the absence of readily available information to thoroughly research the multitude of variables that will affect whether or not treatment improvements (or process modifications) are required and if so, to what degree they are required.

Again, it is important to note that department did not evaluate the specific individual impacts or treatment needs for each wastewater treatment facility noted in the Fiscal Impact Statement (FIS). Basic assumptions and evaluations were made on the general impacts on all facilities predicted to be affected. Any efforts to provide facility specific fiscal impacts for all potentially affected facilities with the current lack of necessary data to make an accurate determination will take several months if not years to complete and incur a significant cost to the state to acquire such information. The specific individual impacts and needs will be best evaluated by the facility's staff or retained consultant. Innovative or unique treatment methods and implementation options may be available to some facilities thereby reducing specific costs.

The department acknowledges that there may be impacts associated with uncontrolled sources of pollution not associated with industrial process wastewater contributions. Elevated copper levels have been noted in some municipal treatment plant effluent where no industrial contributions are known to exist. It is expected that these elevated levels are due to the prevalence of copper pipe used in residential plumbing. The copper can enter the waste stream due to the corrosion of the household plumbing. More facilities may now have a reasonable potential to violate the new copper criteria and may require

monitoring and limits. It is not possible to accurately determine what the fiscal impact of this scenario may be.

The department clearly recognizes that the implementation of these proposed rules and rule changes may have far-reaching economic impacts. Historically, compliance with the provisions of the federal Clean Water Act has carried a significant price tag and will continue to be costly as requirements and guidelines are reaffirmed. It is the goal of the department to implement these proposed rules in a reasonable, practicable, and responsible manner. Thus, the implementation will be linked to the reissuance of each facility's NPDES permit. All available NPDES provisions and consideration will be made to allow adequate time for each facility to comply with the adopted rules according to their time constraints, economic abilities, and source of financial aid. Also, there are several potentially lesser-cost metal removal approaches (or approaches to comply with stringent effluent metal limits) that may be available to facilities, but specific economic consideration of these alternatives could not be included in the Fiscal Impact Statement. None of these alternatives has universal application to all impacted facilities and each alternative should be assessed by the managing authority on an individual basis.

With past Water Quality Standards (WQS) rule making efforts and the adopted rules, several alternatives have developed to allow affected entities additional time, reduced construction costs, and operational flexibility when the rules are implemented. Some of these alternatives have been integrated into the rules, such as the stepped mixing zones percentages for ammonia, site-specific data collection, and the use of an instream effluent diffuser.

Issue 11: Iowa Code Section 25B.6

"In reviewing documentation pertaining to the proposal to amend the table of criteria for chemical constituents, CCC does not believe the Department has satisfied its obligation under Iowa Code Section 25B.6 pertaining to fiscal impact analysis. Section 25B.6 states:

'A state agency or department shall not propose or adopt an administrative rule which exceeds its statutory authority by mandating expenditures by political subdivisions, or agencies and entities which contract with political subdivisions to provide services. A state administrative rule, proposed pursuant to chapter 17A, which necessitates additional combined annual expenditures exceeding one hundred thousand dollars by all affected political subdivisions or agencies and entities which contract with the affected political subdivisions to provide services shall be accompanied by a fiscal impact statement outlining the costs. An affected political subdivision, or an entity representing an affected political subdivision, shall cooperate in the preparation of the fiscal impact statement. The fiscal impact statement shall be

submitted to the administrative rules coordinator for publication in the Iowa administrative bulletin along with the notice of intended action.

The fiscal note shall also be submitted to the legislative fiscal committee of the legislative council. Beginning in the first full fiscal year after adoption of the state administrative rule, the fiscal committee shall annually prepare a report for each fiscal note submitted detailing the fiscal impact of the administrative rule on the affected political subdivision, or agencies and entities which contract with the political subdivision to provide services. The report shall be transmitted to the governor and the general assembly.'

As noted above, Section 25B.6 further requires that the affected political subdivision, or an entity representing an affected political subdivision, shall cooperate in the preparation of the fiscal impact statement. The fiscal impact statement prepared for the NOIA to amend Chapter 61 notes that the potential capital and annual operating and maintenance costs for cyanide removal for the City of Charles City could total \$1.2 million and \$41 million, respectively. I have discussed this issue with the City of Charles City Administrator, Tom Brownlow, and the City of Charles City Wastewater Superintendent, Dan Nicholson; neither of whom were contacted by the Department regarding this fiscal evaluation. Failure to allow the City of Charles City, or other affected political subdivisions, the opportunity to participate in the fiscal evaluation and to "cooperate in the preparation of the fiscal impact statement" further demonstrates that the existing report does not satisfy Iowa Code."

Response: Section 25B.6 of the Code of Iowa places an obligation on an affected political subdivision, or an entity representing an affected political subdivision, to cooperate in the preparation of the fiscal impact statement. This is not a requirement for the Department, but instead is a requirement that an affected political subdivision cooperate to the extent such cooperation is requested by the Department. When the legislature has intended to require that the Department seek such input, it has used such language as "input shall be received from a water quality standards committee convened by the department" (455B.176A(5)).

Issue 12: Human Health Arsenic Criteria

" . . . seeking clarification from the Department on how it plans to address base load of pollutants that enter a facility through its water supply in relation to development of water discharge permit limits. In certain cases, proposed levels for chemical constituents are significantly lower than current drinking water standards. For example, the current drinking water standard for arsenic is 10 micrograms per liter (ug/l). The proposed rule specifies a human health criteria for arsenic of 1.4 ug/l. In this case, a facility could receive a base load of arsenic in its water supply that is nearly 10 times the listed human health standard. This

load is likely to pass through to a facility's wastewater discharge. As such, permit limits should be based upon the net increase in pollutant load from source operations, with an allowance given for water supply load."

"IDNR's inability to provide a calculated WLA for arsenic for each NPDES permitted point source discharge to the Cedar River prejudices FDAH-CCs ability to adequately determine the technical considerations and resulting economic impacts of the proposed 1.4 ppb arsenic limit for human health fish consumption-based WQC."

"There currently is no Standard Method's approved analytical methodology for arsenic (III) at the proposed water quality criteria (WQC) concentrations and there are no commercial laboratories with State of Iowa Certification for this parameter."

"Though EPA publications contain arsenic removal strategies and technologies, and commercial systems are ostensibly available for arsenic removal in water supplies (as a result of the EPA's arsenic MCL reduction to 10 ppb), these treatment technologies are considered innovative and untested, at best, and reflect treatment only on a water supply matrix environment."

"Two remedial groundwater collection systems are operated by FDAH-CC, as required by the EPA and the IDNR. Both groundwaters contain arsenic and are located in the Charles City area, and both are permitted and discharge ultimately into the Cedar River. Cost ineffectiveness and/or technical infeasibility of managing these discharges, based on the proposed human health fish consumption-based WQC for arsenic, could result in their shutdown, causing non-compliance with existing/pending administrative orders mandating these remedial measures."

Response: In the context of Safe Drinking Water Act (SDWA) implementation, MCLs define the maximum permissible level of a contaminant in water that may be delivered to a user of a public water system. The MCL for arsenic is 10 ppb. Consistent with SDWA requirements, the MCLs for arsenic are set based on not only human health risk assessment information, but also other factors such as treatment costs and benefits, as well as analytical detection limits. Also, the drinking water standard is derived based on consumption of water only.

The current EPA ambient human health criteria (0.14 ppb for fish consumption only and 0.018 ppb for both fish and water consumption) are calculated based on a cancer risk level of 10^{-6} for a 70 kg person with a default fish and shellfish consumption of 6.5 gm/day for lifetime exposure. Risk levels of 10^{-5} , 10^{-6} , & 10^{-7} are often used by States as minimal risk levels in interpreting the human health standard. In Iowa, the human health criteria for carcinogenic parameters are based on the prevention of an incremental cancer risk level of 10^{-5} . For noncarcinogenic parameters, Iowa adopted the recommended EPA criterion

directly. Since arsenic is classified as a potential carcinogen, Iowa originally proposed the following criteria changes for human health protection: changing the human health criterion of 50 ppb to 1.4 ppb for fish consumption only; no changes for the current 0.18 ppb for consumption of both fish and water.

The ambient water quality standard is to protect the designated uses. If fish consumption is occurring in the waterbody, the human health criteria apply to protect the use regardless of where the pollutant comes from or sources of the pollutants. For certain chemicals such as copper, the drinking water standard (MCL of 1300 ug/l) may be less stringent than the aquatic life criteria (chronic criterion of 9.3 ug/l). Thus, in this case, the tap water may allow a higher concentration than the ambient copper concentration for aquatic life protection. If higher copper concentration is allowed for the discharges to surface waters because the tap water may contain higher copper levels, it could harm the aquatic life species in the waterbody.

Even though the drinking water standard for arsenic is 10 ppb, the water supply usually has lower concentrations than the MCL. As a result, the municipal discharges usually do not have high arsenic concentrations in the effluent. If it does, there are technologies available to remove arsenic from the wastewaters. Also, the human health criteria for fish consumption are not end-of-pipe limits. The implementation of human health based limits allows stream flow for dilution.

Additional research conducted by IDNR indicates that there are several uncertainty factors associated with the current EPA 304(a) arsenic criterion for “fish consumption only” and EPA is in the process of actively revising the criterion value. With the concurrence of EPA Region VII, the Department decided to remove the proposed arsenic HH criterion revision for “fish consumption only” at this time. IDNR will continue to conduct more research and work with EPA to resolve the issue and revise it in the near future. In the meantime, Iowa will adopt the 304(a) criteria for aquatic life protection and continue to apply the adopted EPA 304(a) criterion for both “fish and water consumption” of 0.18 ppb for Class C Drinking Water uses.

Regarding the comment received inquiring about standard methods for arsenic (III), it is true that most standard methods for the analysis of water and wastewater usually measure total arsenic since the sample is digested prior to analysis. Hydride generation atomic absorption spectroscopy could determine As(III) and As(V) by generating arsine at two different pH levels.

Issue 13: Silver

“Silver, EPA's 304(a) chronic criteria for silver is 3.8 ug/l in total recoverable form, not 4.0 ug/l”

Response: For silver, there is only EPA published 304(a) acute criterion and no chronic criterion. Thus, this is an acute criterion issue. The current published 2006 304(a) criterion for silver is 3.2 ug/l as dissolved, which is converted from the original total recoverable silver criterion published in the 1980 EPA 304(a) ambient criteria document for silver. The EPA 1980 Silver Criteria document listed the acute criterion for silver at a hardness of 100 mg/l as CaCO₃ as 4.1 ug/l, which is in total form. Since the numerical criteria for silver is adopted as total recoverable form in Iowa rules, IDNR directly adopted the total recoverable value for silver (at a hardness of 100 mg/l as CaCO₃) as 4.0 ug/l (rounded down from 4.1 ug/l to 4.0 ug/l) without the need for conversion.

However, there was a typographical error in the original 1980 304(a) criteria for silver. The typographical error occurred in computing the Final Acute Value. As a result, the correct total recoverable acute criterion for silver should have been 3.8 ug/l instead of 4.1 ug/l at a hardness of 100 mg/l as CaCO₃ as published in the original 1980 304(a) criteria document. Thus, IDNR will change the acute silver criterion value from 4.0 ug/l to 3.8 ug/l (as total recoverable) in the final rule to be consistent with the corrected 304(a) criterion for silver.

Issue 14: Vinyl Chloride

“Vinyl Chloride human health - fish criterion should be 24.0;”

Response: The EPA 304(a) human health criterion for fish consumption only is 2.4 ug/l for vinyl chloride. And the EPA value is derived based on the prevention of an incremental cancer risk level of one in one million (10^{-6}). In Iowa, the human health criteria for carcinogenic parameters are based on the prevention of an incremental cancer risk level of 1 in 100,000 (10^{-5}). Since vinyl chloride is a known carcinogen, the proposed Iowa criterion value should be 24 ug/l instead of 240 ug/l as originally proposed. This typographical error has been corrected in the final rule.

Recommendations for Final EPC Action

The following changes were recommended after all comments from the public hearings were assessed and are as follows:

1. The Arsenic (III) parameter in the human health, Class HH designation, for fish consumption has been removed from the final rule due to the uncertainties associated with the 304(a) criterion value and more research needed.
2. The Vinyl Chloride parameter in the human health, Class HH designation, for fish consumption has been corrected to be 24.0 ug/l instead of 240 ug/l.
3. The acute criterion for silver has been changed from 4.0 ug/l to 3.8 ug/l to be consistent with the latest EPA technical guidance.

It is recommended that the EPC adopt a final rule reflecting these above noted changes to the NOIA.

Appendix A: List of Commentors

The following is a list of the individuals and organizations that commented or assisted in preparation of responses to comments on the proposed rule changes during the public comment period. All public comments are available upon request.

Government Agencies:

Lori McDaniel – Iowa Department of Natural Resources (Water Resources)

Jon Tack – Iowa Department of Natural Resources (Legal)

Adam Schnieders – Iowa Department of Natural Resources (Water Resources)

Connie Dou – Iowa Department of Natural Resources (Water Resources)

Commentors:

Neil Leipzig, Conestoga-Rovers & Associates, Inc. on behalf of Fort Dodge Animal Health, Charles City, IA

Stephen L. Hershner, Cedar Rapids Water Pollution Control Facilities

Thomas I. Brownlow, Charles City, IA

Steve Veysey, Iowa Chapter of the Sierra Club

Marian Riggs Gelb, Iowa Environmental Council

Jay Brady

Larry Smidt

Thomas W. Neumann

US EPA Region VII